Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Ph. - SEMESTER–II • EXAMINATION – SUMMER-2018

Subject Code: MPA201T **Date: 14/05/2018**

Subject Name: ADVANCED INSTRUMENTAL ANALYSIS

Time: 10:30AM TO 01:30PM **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	(a)	Enumerate detectors of HPLC and discuss in detail universal detector.	06
	(b)	Explain principal behind Gas chromatography.	05
	(c)	Write a note on CE – MS hyphenation.	05
Q.2	(a)	Give detail note on LCMS.	06
	(b)	Explain in detail Rate theory of chromatography and plate theory of chromatography.	05
	(c)	Write a note on chemical shift.	05
Q.3	(a)	Discuss principles and pharmaceutical applications for Super critical fluid chromatography.	06
	(b)	Explain in detail injector system used in HPLC.	05
	(c)	Discuss the applications of NMR.	05
Q.4	(a)	Give an informative notes on different column used in GC.	06
	(b)	Discuss the pharmaceutical applications of HPTLC.	05
	(c)	What is mass spectroscopy? Give detail principle of MS.	05
Q.5	(a)	Define Following Terms: a) Resolution b) Supercritical Fluid Chromatography c) Retention Time d) Chromatogram e) Asymmetric Factor f) Guard Column	06
	(b)	Explain principal and instrumentation of Headspace analysis.	05
	(c)	Discuss Crown Ethers as Buffer Additives in Capillary Electrophoresis.	05
Q. 6	(a)	What is mass fragmentation? Write rules of fragmentation with its arrangement in MS.	06
	(b)	Discuss the causes of chemical shift and shielding.	05
	(c)	Write a note on Partition chromatography	05
Q.7	(a)	Write a note on stationary phases in normal and reversed phase HPLC	06
	(b)	Enlist the mass analyzer and discuss in detail TOF.	05
	(c)	Explain in depth Nosy Experiment.	05

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